

ABSTRACT

A STUDY ON SERUM MAGNESIUM LEVEL IN PATIENTS WITH HEART FAILURE

BACKGROUND

Cardiac stability depends on several factors like blood supply, conduction system, blood pressure, oxygen saturation, electrolytes etc. Electrolytes involved in the pathogenesis of heart failure includes sodium, potassium, magnesium and calcium¹. The role of magnesium in heart failure is underestimated.

Magnesium deficiency is associated with arrhythmias². Hypomagnesemia is also associated with accelerated atherosclerosis and cardiomyopathies³. Magnesium is also essential for many other physiological functions of myocardium.⁴

So it was decided to study the prevalence of hypomagnesemia in patients with cardiac failure.

METHODOLOGY

This is a single centred non randomised prospective study in determining the serum magnesium levels among 41 patients with heart failure. Patients in thanjavur district admitted in thanjavur medical college with heart failure during the period between march 2017 to august 2017 were taken up for this study.

All patients were asked about age , sex, occupation place. All details about the symptoms of heart failure like breathlessness, pnd, palpitation etc mentioned in Framingham criteria for heart failure were asked to the patients. Patients were examined for tachypnea,cyanosis,pedal edema and jvp. Blood pressure and pulse were recorded. Cardiovascular system was examined for s3 gallop and murmurs. Respiratory system was examined for signs of pulmonary edema and pleural effusion and abdomen for ascites and congestive hepatomegaly.Lab investigations like CBC,RBS,RFT,electrolytes, chest x ray, ecg and echocardiogram were done and findings were recorded.

CONCLUSION

More than half of the patients admitted with heart failure had hypomagnesemia. This shows hypomagnesemia may be seen in many patients with heart failure. The correction of hypomagnesemia may make the patients to have a better standard of living.This requires further studies in a larger sample.

Hypomagnesemia is more common in patients with alcoholism,diabetes mellitus, CAD and patients admitted with complaints of breathlessness. In alcoholoids malnutrition associated with heavy drinking may be the cause of hypomagnesemia. In other patients whether hypomagnesemia is secondary to the disease process or hypomagnesemia is the initiating agent needs to be studied.

Patients admitted with pulmonary edema had hypomagnesemia. This shows hypomagnesemia is associated with severe decompensated heart failure.

KEY WORDS: MAGNESIUM,HYPOMAGNESEMIA,HEART FAILURE